

The Honors Program of the University of Missouri – Kansas City

Diagnosis Differences in Childhood Mental Health Disorders

Zalyia Carr

May 12, 2023

Written under the direction of Dr. Erin Hambrick, Ph.D.

UMKC Psychology Department

A thesis submitted in partial fulfillment of the requirements to graduate as an Honors Scholar  
from the University of Missouri – Kansas City

### **Abstract**

In both mental and physical health, it is well known that early detection and treatment of problems is best. This is especially true when diagnosing and treating childhood mental disorders (Mandy, et.al, 2022). Some common childhood mental disorders are Autism, ADHD, and Specific Learning Disorders (SLD). While these are normally diagnosed in early childhood or adolescence, rates of early diagnosis likely differ amongst the demographics. For example, Autism and ADHD are more likely to be diagnosed in boys. Not because there are fewer girls with ADHD and Autism in the world, but because symptoms display differently in girls making it harder to detect (Wood-Downie, 2021). Black children have lower rates of diagnosis for ADHD than White children even though symptoms appear at similar rates (Coker, 2016). Black children are more often diagnosed with disorders such as Oppositional Defiant Disorder and Conduct Disorder than their White counterparts (Fadus, 2019). Studies that analyze signs and symptoms of these disorders aren't diverse; participants typically come from Western cultures, preventing researchers from accounting for global differences. In studies that do ask for race, the participants are majority White. Studies are more likely to not ask for race, preventing researchers from identifying and analyzing potential trends among races (Qu, 2020). Because of these factors, I hypothesize that Black females are at higher risk for delayed diagnosis of mental health problems that typically first appear during childhood, such as Autism, ADHD, and SLD. An anonymous study was developed, online, and distributed on a college campus. It was designed to isolate data from the participants of interest, "females who identify with Autism, ADHD, and or a Specific Learning Disorder". A descriptive analysis was conducted; however, this study was unable to identify a racial disparity in diagnosis due to a lack of Black

participants. This study could provide exemplars of challenges females face in receiving an early diagnosis of Autism, ADHD, and SLD.

### **Introduction**

Autism Spectrum Disorder, Attention Deficit/Hyperactivity Disorder (ADHD), and Specific Learning Disorder (SLD) are three diagnoses often conferred during early childhood. 1/36 children can be diagnosed with Autism and symptoms can be noticed as early as age 2 (CDC.gov). Children can exhibit a variety of behavioral and emotional differences such as: obsessive interests, delayed language, delayed motor skills, sensory sensitivities, etc. (CDC.gov). ADHD is typically diagnosed in childhood and children with ADHD may experience restlessness, difficulty concentrating, problems with impulse control etc. Estimates of ADHD diagnosis range from 6% to 16% of children (CDC.gov). Specific Learning Disorder is an umbrella term that covers a variety of disorders that affect learning such as dyscalculia, dyslexia, and dysgraphia. Struggles with SLD disorders are typically noticed in early elementary as SLD can impact progression in certain academic domains. It is estimated that 5-15% of school aged children have a specific learning disorder (Psychiatry.org, 2021)

Autism, ADHD, and SLD, are all distinct, but they share many common factors. All of them affect a child's schooling. Children diagnosed with any of the three disorders often have an individualized educational program (IEP), and other academic supports. An IEP allows for a student to progress through school at a pace more suitable for them. Another similarity between the three disorders is the importance of early intervention. Navigating childhood without proper diagnosis and treatment of these disorders can have lifelong consequences. A lack of early intervention can lead to the increased risk of developing comorbidities; difficulty maintain employment; difficulty maintaining health social bonds; and an increased risk of death

(McLaughlin, 2004). Another similarity is the fact that females are less likely to be identified with these disorders than males (Frances et.al, 2022).

There are a few theories as to why these gender disparities in diagnosis occur. Regarding ADHD and Autism, symptoms present themselves differently in females than they do males. Autism and ADHD both cause behavioral differences in people, and some theorists suggest the behaviors exhibited by females are different than males due to biological differences. Another theory as to why behavioral symptoms are sometimes different is because females are socialized differently than males. For example, rowdiness in a girl may seem “unladylike” and therefore punished, while the same behavior in a boy may be excused because “boys will be boys”. In the girl, the behavior is less likely to continue if it results in punishment. This would force them to mask their symptoms or express them in more “appropriate,” ways (Wood-Downie, et.al, 2021). Regardless of reason, if girls are not being identified properly, then they’re going to be misdiagnosed which means they’re missing out on the academic and social interventions.

There is also evidence to suggest racial disparity within diagnoses. Studies have shown, black children, compared to white children with similar symptoms, are more likely to get diagnosed with Oppositional Defiant Disorder (ODD) or Conduct Disorder. This is problematic because an ODD or Conduct Disorder diagnosis does not provide a child with an appropriate amount of treatment options. (Fadus, et.al,) A study focused on disparities in diagnosis and treatment of Autism, did find a significant difference in diagnoses rates by race. However, a disparity was found in access to healthcare treatments for Black, Latino, and poor children (Liptak, et.al, 2018). For SLD, there’s evidence to suggest there is a racial disparity in diagnosis, when accounting for socio-economic status. “In fact, once we account for other covariates of SES and academic and language-immigration history, the odds of identification for an African

American student are significantly lower (28%) than a White student of comparable background” (Shifrer, et.al, 2011). Some researchers attribute the racial disparities in diagnoses to a lack of cultural differences within diagnostic criteria. Many studies that analyze symptoms of various diagnoses often do not have a culturally diverse population or they do not consider how the cultural differences within a population may have affected their results. It has been found that culture can affect a child cognitively and developmentally (Qu, et.al, 2020).

### **HYPOTHESIS**

Due to the intersection of gender and racial disparities, it is hypothesized that Black females will be diagnosed later in life than White females.

### **METHODOLOGY**

The target population of the study was females, diagnosed with Autism, ADHD and or SLD by a professional. The aim of the study was to collect reflective data about females’ experiences receiving their diagnosis. Specifically, we wanted to know what age participants were diagnosed at, what treatments were available to them, and how their diagnosis affected their life.

An online survey was developed. It contained quantitative questions intended to be the primary dimensions of comparison. It also contained qualitative questions intended to gain insight on the consequences and long-lasting effects of their diagnosis. Due to the sensitivity of the subject matter, the online survey was anonymous. The survey was initially distributed amongst a broad undergraduate population. This was done via posting the survey on the platform Psych Pool, as well as inserting it in various club newsletters, and hanging flyers in specific campus centers. To broaden the participant pool, the survey was also distributed via social media. The survey was designed to filter out people who did not fit the target criteria. The survey

reached 114 people, 26 of whom self-identified as having at least one of the three disorders of interest. Of those 26, 26 identified as white (1 of the 26 identified as Hispanic as well); 0 identified as Black. Females from all racial backgrounds were eligible to take the survey, however data from white participants and Black participants were going to be isolated. Due to a lack of data for Black participants, there was no opportunity for comparison.

## RESULTS

Despite the lack of participants of color, calculations were made for the available data. Means of the age of diagnosis were taken for each disorder. The means were 14, 16.7, and 19 for Autism, ADHD, and SLD, respectively.

Whom recommend each participant for an assessment was analyzed (See Figure 1). For ADHD, oneself or a mental health provider were the most common source of recommendation for assessment; both made up 30% of respondents. This was followed by caregiver representing 23%; teacher representing 7%; medical provider representing 3%. For Autism, the most common recommender, representing 50% of respondents, was a caregiver. Mental health provider, oneself, and “other” represented about 17%, respectively. Respondents were not asked to elaborate on who “other” is. The single respondent with a SLD recommended themselves.

When analyzing the usage of treatment options, the most common treatments used by those with autism, was therapy; For those with ADHD, it was medication. The individual with a SLD used only classroom modifications after their diagnosis (See Figure. 2). 2 respondents indicated they used no treatment; both respondents had an ADHD diagnosis.

When asked about their socioeconomic status at the time of diagnosis the majority, about 53% of respondents indicated they were working class. About 38% of respondents were middle class and about 8% were upper class (See Figure. 3). Nearly 77% of respondents indicated they

lived in a suburban area at the time of their diagnosis. Inner city and rural areas each represented about 12% of respondents (See Figure. 4).

Twelve years was the mean age at which participants first interacted with a mental health professional. 77% of participants indicated an earlier diagnosis may have changed their mental health outcome.

### **DISCUSSION AND IMPLICATIONS**

The results available are only for participants who identified as white. It is possible that results would differ in participants who identify as Black, as well as other racial minorities. To theorize why there was a lack of Black participants, the skip logic of the survey was altered three months after its initial launch. Originally, questions pertaining to race were only asked if the participants had already identified as having one of the disorders. This was changed to allow all participants to identify their race and ethnicity regardless of whether they had a diagnosis. This was to determine if Black women were not taking the survey at all or if they were taking the survey but didn't identify with the disorders. The results of changing the skip logic is limited, as a majority of the data had already been gathered.

One theory is that a university was not the most appropriate place to look for such a niche group of people. People with neurodiversity such as autism ADHD or SLD, experience a disparity in acquiring a college education compared to neurotypical individuals. Neurodivergent people are less likely to start college and finish college. Those who do finish college tend to take longer than their neurotypical peers (Geyer, 2021). Black people also experience a disparity in college attendance and completion compared to white people (Merolla, 2018). These factors combined would make it difficult to find people who identified as being both neurodivergent and Black.

Another theory as to why there's so no data representing Black females, is that the disparity is greater than initially hypothesized. The survey aimed to collect data on females' experience receiving a diagnosis, however if many Black females are not receiving a diagnosis, there is no data can be collected. This theory is supported by the fact that there is a large stigma related to mental health care in the Black community. One study was done to analyze perceptions of mental health in Black women (Ward, et.al, 2010). The women of the study were able to accurately identify symptoms of mental health in others as well as acknowledge where they themselves may be suffering mental health wise. However, despite the acknowledgement that a mental disorder may be happening, most of the women expressed a disinterest in seeking care for various reasons. Participants cited reasons such as not wanting to be medicated, fear of being mistreated by their healthcare professional, as well as a lack of belief that it could help. These perceptions of mental health are likely experienced by many Black women. It is possible that there are Black women who may suspect they are neurodivergent in some way but are resistant to seeking care.

### **SUGGESTIONS FOR FURTHER RESEARCH**

There are many suggestions for replication of this study. To increase the likelihood of collecting data on all types of participants, the survey could be distributed in a high school setting. Along with this, parents could participate in the completion of the survey. Parents could offer contextual or factual information that the participant either does not know or does not remember.

To ease the task of finding participants diagnosed with ADHD, Autism or SLD, the survey could be distributed amongst a clinical population, meaning a setting in which people are already seeking treatment for one of these disorders.



In the current study, participants were asked if they were diagnosed by a licensed professional, this excludes any self-diagnosis or “diagnosis” by non-licensed individuals. An alternative study can be conducted to gather data on how many people suspect they qualify for a diagnosis; but have not gone in for an evaluation.

It was intended to compare the experiences of Black females to white females however only data about white females was discovered. A lack of participants from other racial minorities could indicate that there are some disparities within those groups. Other studies can be conducted to investigate potential causes with respect to cultural differences within different racial minority groups.

### References

- Centers for Disease Control and Prevention. (2022, March 28). *Signs and symptoms of autism spectrum disorders*. Centers for Disease Control and Prevention.  
<https://www.cdc.gov/ncbddd/autism/signs.html>
- Centers for Disease Control and Prevention. (2022a, August 9). *Data and statistics about ADHD*. Centers for Disease Control and Prevention. <https://www.cdc.gov/ncbddd/adhd/data.html>
- Centers for Disease Control and Prevention. (2022b, August 9). *What is ADHD?*. Centers for Disease Control and Prevention. <https://www.cdc.gov/ncbddd/adhd/facts.html>
- Centers for Disease Control and Prevention. (2023, April 4). *Data & statistics on autism spectrum disorder*. Centers for Disease Control and Prevention.  
<https://www.cdc.gov/ncbddd/autism/data.html>
- Coker, T. R., Elliott, M. N., Toomey, S. L., Schwebel, D. C., Cuccaro, P., Tortolero Emery, S., Davies, S. L., Visser, S. N., & Schuster, M. A. (2016). Racial and Ethnic Disparities in ADHD Diagnosis and Treatment. *Pediatrics*, *138*(3), e20160407.  
<https://doi.org/10.1542/peds.2016-0407>
- Fadus, M. C., Ginsburg, K. R., Sobowale, K., Halliday-Boykins, C. A., Bryant, B. E., Gray, K. M., & Squeglia, L. M. (2020). Unconscious Bias and the Diagnosis of Disruptive Behavior Disorders and ADHD in African American and Hispanic Youth. *Academic psychiatry : the journal of the American Association of Directors of Psychiatric Residency Training and the Association for Academic Psychiatry*, *44*(1), 95–102.  
<https://doi.org/10.1007/s40596-019-01127-6>
- Frances, L., Quintero, J., Fernández, A., Ruiz, A., Caules, J., Fillon, G., Hervás, A., & Soler, C. V. (2022, March 31). *Current state of knowledge on the prevalence of*

- neurodevelopmental disorders in childhood according to the DSM-5: A systematic review in accordance with the prisma criteria - child and adolescent psychiatry and mental health*. SpringerLink. Retrieved May 2, 2023, from <https://link.springer.com/article/10.1186/s13034-022-00462-1>
- Geyer, N. (2021, April 3). Beyond Accommodations: Considerations for Supporting and Improving Academic Outcomes for Neurodivergent Students in Post-Secondary Education . University of Wisconsin - Platteville.
- Liptak, G. S., Benzoni, L. B., Mruzek, D. W., Nolan, K. W., Thingvoll, M. A., Wade, C. M., & Fryer, G. E. (2008). Disparities in diagnosis and access to health services for children with autism: data from the National Survey of Children's Health. *Journal of developmental and behavioral pediatrics : JDBP*, 29(3), 152–160.  
<https://doi.org/10.1097/DBP.0b013e318165c7a0>
- Mandy, W., Midouhas, E., Hosozawa, M., Cable, N., Sacker, A., Flouri, E. (2022, February 16). *Mental health and social difficulties of late-diagnosed autistic children, across childhood and adolescents*. The Association for Child and Adolescent Mental Health .  
<https://acamh.onlinelibrary.wiley.com/doi/full/10.1111/jcpp.13587>
- McLaughlin, C. G. (2004, April). *Delays in treatment for mental disorders and health insurance coverage*. Health services research. Retrieved May 2, 2023, from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1361004/>
- Merolla, D. M. (2018). Completing the Educational Career: High School Graduation, Four-year College Enrollment, and Bachelor's Degree Completion among Black, Hispanic, and White Students. *Sociology of Race and Ethnicity*, 4(2), 281–297.  
<https://doi.org/10.1177/2332649217727552>

Qu, Y., Jorgensen, N. A., & Telzer, E. H. (2021). A call for greater attention to culture in the study of brain and development. *Perspectives on Psychological Science, 16*(2), 275-293.

Schaepper, M. A., & Frolov, L. (Eds.). (2021, August). *What is specific learning disorder?*.

Psychiatry.org - What Is Specific Learning Disorder?

<https://www.psychiatry.org/patients-families/specific-learning-disorder/what-is-specific-learning-disorder>

Shifrer, D., Muller, C., & Callahan, R. (2011). Disproportionality and learning disabilities:

Parsing apart race, socioeconomic status, and language. *Journal of learning disabilities, 44*(3), 246-257.

U.S. Department of Education . (2019, August 30). *Guide to the individualized education program*. Home. Retrieved May 2, 2023, from

<https://www2.ed.gov/parents/needs/speced/iepguide/>

Ward, E. C., Clark, L. O., & Heidrich, S. (2010, April 14). *African American Women's beliefs, coping behaviors, and barriers to ...* SagePub.

[https://www.researchgate.net/publication/38024941\\_African\\_American\\_Women's\\_Beliefs\\_Coping\\_Behaviors\\_and\\_Barriers\\_to\\_Seeking\\_Mental\\_Health\\_Services](https://www.researchgate.net/publication/38024941_African_American_Women's_Beliefs_Coping_Behaviors_and_Barriers_to_Seeking_Mental_Health_Services)

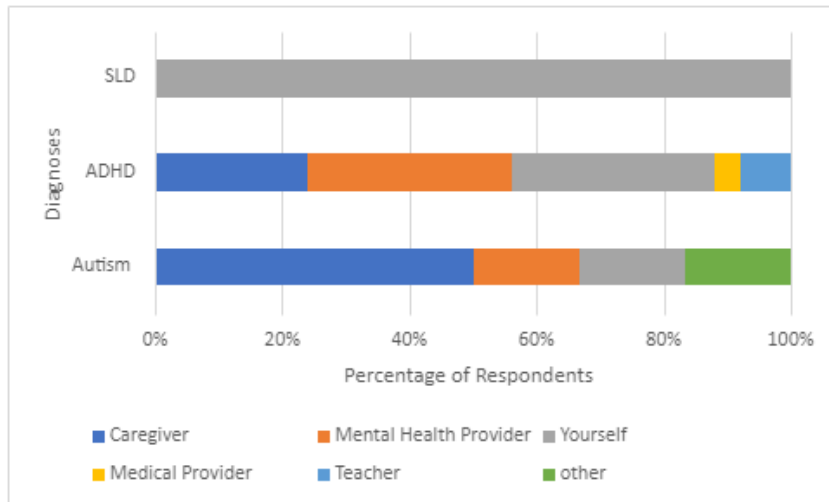
Wood-Downie, H., Wong, B., Kovshoff, H., Mandy, W., Hull, L., & Hadwin, J. A. (2021).

Sex/Gender Differences in Camouflaging in Children and Adolescents with Autism. *Journal of autism and developmental disorders, 51*(4), 1353–1364.

<https://doi.org/10.1007/s10803-020-04615-z>

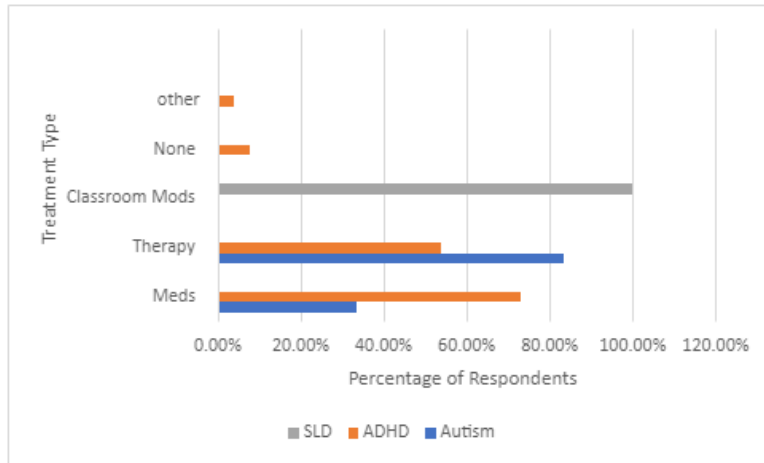
**Figure 1**

*Description of Who Recommended the Respondents for Assessment*



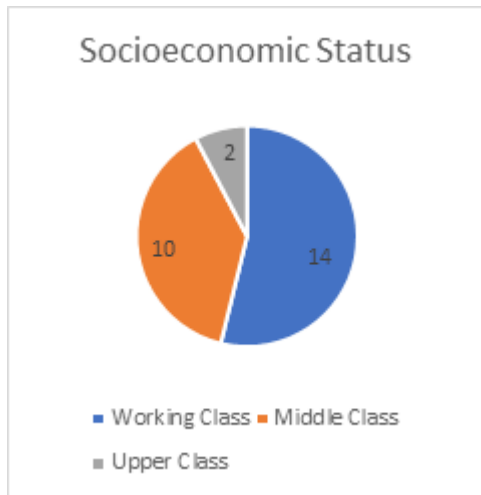
**Figure 2**

*Percentage of Participants Who Utilized Various Treatment Options*



**Figure 3**

*Socioeconomic Status at the time of Diagnosis*



**Figure 4**

*Type of Neighborhood Lived in at the time of Diagnosis*

